AMENDMENTS TO THE CLAIMS

1 (Original) A metric generator comprising:

a bit-distance calculator receiving a complex signal along with a constellation that is divided into a one group and a zero group for each bit location, in which the complex signal is modulated using the constellation, for calculating a first distance of the zero group and a second distance of the one group for each received bit, comprising:

means for shifting the complex signal by a predetermined value depending on the constellation and extracting an integer part of the shifted complex signal;

means for finding a first position and a second position respectively located in the zero and the one groups for each bit from a lookup table for the constellation, wherein the first position is nearest to the integer part of the shifted complex signal within the zero group of the constellation and the second position is nearest to the integer part of the shifted complex signal within the one group of the constellation;

means for inversely shifting the first and the second positions by the predetermined value respectively; and

means for respectively calculating the first distance of the zero group between the complex signal and the inversely shifted first position as well as the second distance of the one group between the complex signal and the inversely shifted second position;

means for multiplying the first distance of the zero group by a weighting factor associated with the complex signal to yield a bit metric of zero for each received bit; and

means for multiplying the second distance of the one group by the weighting factor associated with the complex signal to yield a bit metric of one for each received bit.

2 (Original) The metric generator of claim 1 wherein the bit-distance calculator is fed with a real part of the complex signal when an even-numbered bit is to be processed.

3 (Original) The metric generator of claim 1 wherein the bit-distance calculator is fed with an imaginary part of the complex signal when an odd-numbered bit is to be processed.

4 (Original) The metric generator of claim 1 wherein the complex signal is compliant with a standard of Digital Video Broadcasting - Terrestrial (DVB-T).

5 (Original) The metric generator of claim 4 wherein the constellation is representative of QPSK, 16-QAM, 64-QAM, non-uniform 16-QAM or non-uniform 64-QAM mapping.

6 (Original) The metric generator of claim 5 wherein the predetermined value is a parameter a dictated by the DVB-T standard for the constellation.

7 (Original) The metric generator of claim 5 wherein the constellation is divided into the one and the zero groups depending on a bit value of 1 or 0 at each bit location.

8 (Original) The metric generator of claim 1 wherein the weighting factor is a channel-state information value.

9 (Currently Amended): An orthogonal frequency division multiplexing (OFDM) receiver comprising:

a de-interleaver for de-interleaving a series of symbol-based data inverse to interleaving operations at a transmitter end, in which the symbol-based data is modulated with a constellation;

a dynamic quantizer coupled to the de-interleaver, for compressing the de-interleaved symbol-based data to yield a complex signal in accordance with a scheme of the constellation; and

a metric generator coupled to the dynamic quantizer to receive the complex signal, for partitioning the constellation into a one group and a zero group based upon the location of each bit, generating a bit metric of zero with respect to the zero group of the constellation for each received bit, and generating a bit metric of one with respect to the one group of the constellation for each received bit by using the received complex signal and a channel-state information value associated with the received complex signal[[.]]; and

wherein the de-interleaver provides a real part of the de-interleaved symbol-based data when an even-numbered bit is to be processed; and

the metric generator computes the bit metric of zero and the bit metric of one for the even-numbered bit from a real part of the complex signal and a channel-state information value associated with the complex signal.

10 – 13 (Cancelled)

14 (Original) The OFDM receiver of claim 9 wherein the series of symbol-based data is compliant with a standard of Digital Video Broadcasting - Terrestrial (DVB-T) and the de-

interleaver is an inner de-interleaver comprising symbol and bit de-interleavers compliant with the DVB-T standard.

15 (Original) The OFDM receiver of claim 9 wherein the constellation is divided into the one and the zero groups depending on a bit value of 1 or 0 at each bit location.

16 (Previously Presented) An orthogonal frequency division multiplexing (OFDM) receiver comprising:

a first dynamic quantizer for compressing a series of channel-state information values;

a bit de-interleaver for de-interleaving a series of symbol-based data inverse to interleaving operations at a transmitter end and providing the compressed channel-state information value associated with the de-interleaved symbol-based data, in which the symbol-based data is modulated with a constellation;

a second dynamic quantizer coupled to the bit de-interleaver, for compressing the de-interleaved symbol-based data to yield a complex signal in accordance with a scheme of the constellation; and

a metric generator respectively coupled to the second dynamic quantizer and the bit de-interleaver to receive the complex signal and the compressed channel-state information value associated with the complex signal, for partitioning the constellation into a one group and a zero group for each bit location, and generating bit metrics of zero and one with respect to the zero and the one groups of the constellation for each received bit, separately;

wherein the bit metric of zero and the bit metric of one for an even-numbered bit are computed from a real part of the complex signal and the compressed channel-state information value associated with the complex signal;

wherein the bit metric of zero and the bit metric of one for an odd-numbered bit are computed from an imaginary part of the complex signal and the compressed channel-state information value associated with the complex signal.

17 (Original) The OFDM receiver of claim 16 wherein the bit de-interleaver provides a real part of the de-interleaved symbol-based data when the even-numbered bit is to be processed.

18 (Original) The OFDM receiver of claim 16 wherein the bit de-interleaver provides an imaginary part of the de-interleaved symbol-based data when the odd-numbered bit is to be processed.

19 (Original) The OFDM receiver of claim 16 wherein the series of symbol-based data is compliant with a standard of Digital Video Broadcasting - Terrestrial (DVB-T) and the de-interleaver is an inner de-interleaver comprising symbol and bit de-interleavers compliant with the DVB-T standard.

20 (Original) The OFDM receiver of claim 16 wherein the constellation is divided into the one and the zero groups depending on a bit value of 1 or 0 at each bit location.

21 (new) An orthogonal frequency division multiplexing (OFDM) receiver comprising:

a de-interleaver for de-interleaving a series of symbol-based data inverse to interleaving operations at a transmitter end, in which the symbol-based data is modulated with a constellation;

a dynamic quantizer coupled to the de-interleaver, for compressing the de-interleaved symbol-based data to yield a complex signal in accordance with a scheme of the constellation; and

a metric generator coupled to the dynamic quantizer to receive the complex signal, for partitioning the constellation into a one group and a zero group based upon the location of each bit, generating a bit metric of zero with respect to the zero group of the constellation for each received bit, and generating a bit metric of one with respect to the one group of the constellation for each received bit by using the received complex signal and a channel-state information value associated with the received complex signal; and

wherein the de-interleaver provides an imaginary part of the de-interleaved symbol-based data when an odd-numbered bit is to be processed; and

the metric generator computes the bit metric of zero and the bit metric of one for the odd-numbered bit from an imaginary part of the complex signal and a channel-state information value associated with the complex signal.